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=> s cell denisty and image analysis

L1   0 CELL DENISTY AND IMAGE ANALYSIS

=> s cell denisty and classification

L2   0 CELL DENISTY AND CLASSIFICATION

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=>  .

=> s cell and classification and image analysis and tissue

    3 FILES SEARCHED...
L3          196 CELL AND CLASSIFICATION AND IMAGE ANALYSIS AND TISSUE

=> s 13 and density

L4           22 L3 AND DENSITY

=> dup rem 14

PROCESSING COMPLETED FOR L4
L5           16 DUP REM L4 (6 DUPLICATES REMOVED)

=> d 15 bib ab 1-16
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L5   ANSWER 1 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS   DUPLICATE 1
AN   2001:216929 BIOSIS
DN   PREV200100216929
TI   Microvascular development and growth of uterine **tissue** during
     the estrous cycle in mares.
AU   Ferreira-Dias, Graca M. (1); Serrao, Paula M. (1); Durao, Jose F. Costa
     (1); Silva, Jose Robalo (1)
CS   (1) Centro de Investigacao Interdisciplinar em Sanidade Animal, Faculdade
     de Medicina Veterinaria, Rua Prof. Cid dos Santos Polo Universitario Alto
     da Ajuda, 1300-477, Lisbon Portugal
SO   American Journal of Veterinary Research, (April, 2001) Vol. 62, No. 4, pp.
     526-530. print.
     ISSN: 0002-9645.
DT   Article
LA   English
SL   English
AB   Objective-To document uterine growth and microvascular development in the
     endometrium of uteri with differing degrees of fibrosis as well as uterine
     growth throughout the estrous cycle of mares. Animals-30 mares.
     Procedure-Uterine **tissue** was obtained during the breeding season
     from a slaughter facility. Stage of estrous cycle of the mares was
     assessed on the basis of ovarian structures and plasma progesterone
     concentrations. Endometrium was characterized by use of light microscopy,
     and blood vessel walls were marked by histochemical techniques.
     Microvascular development was evaluated by a computerized **image
     analysis** system. Growth of uterine **tissue** was based on
     cellular content of DNA and RNA, RNA:DNA, and protein: DNA.
     Results-Significant differences in vascular **density** were not
     observed in the endometrium of uteri obtained from mares euthanatized
     during the follicular or luteal phase of the estrous cycle, regardless of
     whether endometrial **classification** of degree of fibrosis was
     considered. There was a 3-fold increase in amount of DNA and RNA of
     endometrial **cells** in the follicular phase when compared to
     myometrium. Hypertrophy of endometrial **tissue** during the luteal
     phase was reflected by a significant increase in **cell** protein
     content and protein:DNA. Conclusions and Clinical Relevance-Endometrial
     growth of vascular **tissues** during the estrous cycle may be
     coordinated with development of nonvascular **tissue**. Estrogen and
     progesterone may play a role in regulation of uterine growth and
     angiogenesis.

L5   ANSWER 2 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS   DUPLICATE 2
AN   2000:423342 BIOSIS
DN   PREV200000423342
TI   Vascular architecture and hypoxic profiles in human head and neck squamous
     cell carcinomas.
AU   Wyffels, Kiem (1); Kaanders, Jham; Rijken, P. F. J. W.; Bussink, J.; van
     den Hoogen, F. J. A.; Marres, Ham; de Wilde, P. C. M.; Raleigh, J. A.; van
     der Kogel, A. J.
CS   (1) Institute of Radiotherapy, University of Nijmegen, 6500 HB, Nijmegen

DT   Article
LA   English
SL   English
AB   Tumour oxygenation and vasculature are determinants for radiation treatment outcome and prognosis in patients with squamous **cell** carcinomas of the head and neck. In this study we visualized and quantified these factors which may provide a predictive tool for new treatments. Twenty-one patients with stage III-IV squamous **cell** carcinomas of the head and neck were intravenously injected with pimonidazole, a bioreductive hypoxic marker. Tumour biopsies were taken 2 h later. Frozen **tissue** sections were stained for vessels and hypoxia by fluorescent immunohistochemistry. Twenty-two sections of biopsies of different head and neck sites were scanned and analysed with a computerized **image analysis** system. The hypoxic fractions varied from 0.02 to 0.29 and were independent from T- and N-**classification**, localization and differentiation grade. No significant correlation between hypoxic fraction and vascular **density** was observed. As a first attempt to categorize tumours based on their hypoxia profile, three different hypoxia patterns are described. The first category comprised tumours with large hypoxic, but viable, areas at distances even greater than 200 mum from the vessels. The second category showed a typical band-like distribution of hypoxia at an intermediate distance (50-200 mum) from the vessels with necrosis at greater distances. The third category demonstrated hypoxia already within 50 mum from the vessels, suggestive for acute hypoxia. This method of multiparameter analysis proved to be clinically feasible. The information on architectural patterns and the differences that exist between tumours can improve our understanding of the tumour micro-environment and may in the future be of assistance with the selection of (oxygenation modifying) treatment strategies.

L5   ANSWER 3 OF 16   MEDLINE
TI   Validation of nuclear texture, **density**, morphometry and **tissue** syntactic structure analysis as prognosticators of cervical carcinoma.
AU   Weyn B; Tjalma W; Van De Wouwer G; Van Daele A; Scheunders P; Jacob W; Van Marck E
CS   Department of Obstetrics and Gynecology, University of Antwerp, Wilrijk, Belgium.
AB   OBJECTIVE: To evaluate the performance of karyometry and histometry in the prediction of survival, recurrence and response of early-stage invasive cervical carcinoma. STUDY DESIGN: Nuclear morphometry, chromatin texture and **tissue** architecture (characterized by syntactic structure analysis) were measured using a semiautomated **image analysis** system on 46 cases of Feulgen-stained **tissue** sections. The performance of the features was compared to that of clinical features, reported to be the best prognosticators until now, such as age, lympho-vascular permeation, histologic type, stage and grade. A K nearest neighbor classifier was used for **classification**. RESULTS: In the prediction of three-year survival, recurrence and response, syntactic

structure analysis proved to be the best performer. **Classification**
rates were, respectively, 100%, 94.4% and 94.5%. In all
classifications, karyometric and histometric features outperformed
clinical features. In general, the best performing features described
differences in second-order population statistics (standard deviations).
CONCLUSION: The results show that a quantitative analysis based on nuclear
morphology, chromatin texture and histology can be considered an excellent
aid in the prognosis of invasive cervical carcinoma. The measurements are
not hampered by the need to undertake complete resections and are suited
to daily practice when implemented in a semiautomated **image**
analysis system.

L5   ANSWER 4 OF 16   SCISEARCH   COPYRIGHT 2001 ISI (R)
AN   2000:819993   SCISEARCH
GA   The Genuine Article (R) Number: 367JE
TI   Specific changes of chromatin structure in nuclei of normal epithelium
     adjacent to laryngeal squamous **cell** carcinoma - A preliminary
     study of 82 cases
AU   Dreyer T (Reprint); Knoblauch I; Garner D; Doudkine A; MacAulay C; Palcic
     B; Popella C
CS   UNIV GIESSEN, INST PATHOL, LANGHANSSTR 10, D-35392 GIESSEN, GERMANY
     (Reprint); BRITISH COLUMBIA CANC AGCY, CANC IMAGING DEPT, VANCOUVER, BC
     V5Z 4E6, CANADA; UNIV GIESSEN, DEPT OTORHINOLARYNGOL, D-35392 GIESSEN,
     GERMANY
CYA GERMANY; CANADA
SO   ANALYTICAL CELLULAR PATHOLOGY, (OCT 2000) Vol. 20, No. 2-3, pp. 141-150.
     Publisher: IOS PRESS, NIEUWE HEMWEG 6B, 1013 BG AMSTERDAM, NETHERLANDS.
     ISSN: 0921-8912.
DT   Article; Journal
FS   LIFE; CLIN
LA   English
REC Reference Count: 47
     ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB   The aim of this study was to confirm the existence of specific nuclear
     texture feature alterations of histologically normal epithelial borders
     nearby invasive laryngeal cancer (NC).
         Paraffin sections of NC and of chronic inflammations unrelated to
     cancer (CI) were analysed for nuclear texture and for integrated optical
     density (IOD-index) and were compared to normal epithelium of
     patients without evidence of cancer (NE). Several discriminant functions
     based on nuclear texture features were trained to separate different
     subgroups.As the most important result, specific nuclear texture feature
     shifts were only found in NC with high-**density** lymphocytic
     stroma infiltrate (NC+). **Classification** of nuclei of NE versus
     NC+ was correct in 70%. The same classifier was correct in only 58% when
     nuclei of NE were classified versus CI. We also found lower values of
     IOD-Index within the NC+ group when compared to NE (p <0.001).

L5   ANSWER 5 OF 16   MEDLINE
AN   2000024271   MEDLINE
DN   20024271   PubMed ID: 10560481
TI   Distinguishing cortical adrenal gland adenomas from carcinomas by their
     quantitative nuclear features.
AU   Scarpelli M; Montironi R; Mazzucchelli R; Thompson D; Bartels P H
CS   Department of Pathology, University of Ancona, Italy.
NC   R 35 CA 53877 (NCI)
SO   ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, (1999 Apr) 21 (2)
     131-8.
     Journal code: ACQ; 8506819. ISSN: 0884-6812.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199911
ED   Entered STN: 20000111
     Last Updated on STN: 20000111
     Entered Medline: 19991124
AB   OBJECTIVE: To explore data from a set of cases of adrenal cortical
     adenomas with different endocrine syndromes and carcinomas to determine

whether quantitative image analysis of nuclear
features might be used ● separate the groups. STUDY DE●●N: Fifteen
adrenal cortical tumors in which clinical information and optimally
preserved, paraffin-embedded **tissue** were available were used.
There were 10 adenomas and 5 carcinomas. Among the adenomas, five were
associated with primary hyperaldosteronism (Conn's syndrome) and five with
Cushing's syndrome. Five-micrometer-thick sections were stained with
hematoxylin and eosin. In each case 50 nuclei were measured, and a number
of morphometric and densitometric features were extracted. The data were
subjected to multivariate analysis. RESULTS: Quantitative analysis showed
that nuclei from adrenal carcinomas are larger than those from adenomas.
Total optical **density** (OD) had a near-diploid distribution in
the adenomas, while it was clearly aneuploid in the carcinomas. The pixel
OD histograms were almost identical for all groups. Differences in nuclear
chromatin texture were found between adenomas and carcinomas and also
between the two adenoma categories. Multivariate analysis showed good
discrimination between carcinomas and adenomas (Wilks lambda = .628, P <
.0001) and between adenomas. However, based on Bayesian decision
boundaries, 20-25% of carcinoma nuclei could be expected to be in the
range of adenoma, and about 12% of Cushing's adenoma nuclei and 15% of
Conn's adenoma nuclei would be classified as carcinoma. CONCLUSION:
Computer-assisted analysis of nuclear characteristics proved useful in
identifying and describing differences between groups of tumors arising in
the adrenal cortex.

L5   ANSWER 6 OF 16   MEDLINE
AN   97133476   MEDLINE
DN   97133476   PubMed ID: 8978872
TI   Breast carcinoma. Correlations between visual diagnostic criteria for
      histologic grading and features of **image analysis**.
AU   Tuczek H V; Fritz P; Schwarzmann P; Wu X; Mahner G
CS   Department of Pathology, Marienhospital and Robert Bosch Hospital,
      Stuttgart, Germany.
SO   ANALYTICAL AND QUANTITATIVE CYTOLOGY AND HISTOLOGY, (1996 Dec) 18 (6)
      481-93.
      Journal code: ACQ; 8506819. ISSN: 0884-6812.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199703
ED   Entered STN: 19970327
      Last Updated on STN: 19970327
      Entered Medline: 19970320
AB   OBJECTIVE: To investigate the relevance of **image
      analysis** for grading breast carcinomas. STUDY DESIGN: The results
      of histologic grading were correlated with 18 features of **image
      analysis**, including SD. "Simple" characteristics, like area and
      perimeter, shape indices, optical **density** and textural features
      of nuclei from cancer **cells**, were analyzed. Hematoxylin-eosin-
      stained **tissue** sections of 67 cancer specimens were routinely
      used for the study. RESULTS: We found statistically significant
      correlations between overall histologic grading and the sum of its
      subscores and features of **image analysis**, especially
      nuclear area, nuclear perimeter and the diameter of the circumscribing
      circle (diametercirc), including their SDs. The visually and therefore
      subjectively assessed subscore of the nuclear pleomorphism of histologic
      grading significantly correlated with the features of **image
      analysis**, like nuclear area, nuclear perimeter, diametercirc,
      integrated optical **density** and correlation (and their SDs).
      There were significant relationships between the absolute numbers of
      mitoses per 10 high-power fields and nuclear area, nuclear perimeter and
      diametercirc (and their SDs). We did not observe a significant correlation
      between the subscore of tubule formation of histologic grading and any of
      the features of the **image analysis** studied.
      Furthermore, the correlations between the features of **image
      analysis** and the subscores of the visual histologic grading system
      were analyzed with respect to each other. The subscore of nuclear
      pleomorphism of histologic grading correlated best with overall grading (r

= .72), whereas no significant correlation could be found between the subscores of nuclear pleomorphism and mitotic activity. CONCLUSION: **Image analysis** provides objectivity and reproducibility to the grading of breast carcinomas and thus could contribute to more individualized prognostication of the disease.

L5   ANSWER 7 OF 16 BIOSIS COPYRIGHT 2001 BIOSIS
AN   1996:327815 BIOSIS
DN   PREV199699050171
TI   Sample preparation and in situ hybridization techniques for automated molecular cytogenetic analysis of white blood **cells**.
AU   Van De Rijke, Frans M.; Vrolijk, Hans; Sloos, Willem; Tanke, Hans J.; Raap, Anton K. (1)
CS   (1) Dep. Cytochem. Cytometry, Leiden Univ., Wassenaarseweg 72, NL 2333 AL Leiden Netherlands
SO   Cytometry, (1996) Vol. 24, No. 2, pp. 151-157.
       ISSN: 0196-4763.
DT   Article
LA   English
AB   With the advent of in situ hybridization techniques for the analysis of chromosome copy number or structure in interphase **cells**, the diagnostic and prognostic potential of cytogenetics has been augmented considerably. in theory, the strategies for detection of cytogenetically aberrant **cells** by in situ hybridization are simple and straightforward. In practice, however, they are fallible, because false **classification** of hybridization spot number or patterns occurs. When a decision has to be made on molecular cytogenetic normalcy or abnormally of a **cell** sample, the problem of false **classification** becomes particularly prominent if the fraction of aberrant **cells** is relatively small. In such mosaic situations, often gt 200 **cells** have to be evaluated to reach a statistical sound figure. The manual enumeration of in situ hybridization spots in many **cells** in many patient samples is tedious. Assistance in the evaluation process by automation of microscope functions and **image analysis** techniques is, therefore, strongly indicated. Next to research and development of microscope hardware, camera technology, and **image analysis**, the optimization of the specimen for the (semi)automated microscopic analysis is essential, since factors such as **cell density**, thickness, and overlap have dramatic influences on the speed and complexity of the analysis process. Here we describe experiments that have led to a protocol for blood **cell** specimen that results in microscope preparations that are well suited for automated molecular cytogenetic analysis.

L5   ANSWER 8 OF 16 SCISEARCH COPYRIGHT 2001 ISI (R)
AN   96:354409 SCISEARCH
GA   The Genuine Article (R) Number: UH687
TI   METHODOLOGICAL ASPECTS OF USING DECISION TREES TO CHARACTERIZE LEIOMYOMATOUS TUMORS
AU   DECAESTECKER C; REMMELINK M; SALMON I; CAMBY I; GOLDSCHMIDT D; PETEIN M; VANHAM P; PASTEELS J L; KISS R (Reprint)
CS   FREE UNIV BRUSSELS, FAC MED, HISTOL LAB, 808 ROUTE LENNIK, B-1070 BRUSSELS, BELGIUM (Reprint); FREE UNIV BRUSSELS, FAC MED, HISTOL LAB, B-1070 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, INST INTERDISCIPLINARY RES & DEV ARTIFICIAL INTEL, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, FAC MED, HISTOL LAB, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, DEPT PATHOL, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, ERASME HOSP, DEPT PLAST SURG, B-1050 BRUSSELS, BELGIUM; FREE UNIV BRUSSELS, FAC SCI APPL, DEPT DIGITAL & LOG SYST, BRUSSELS, BELGIUM; J BORDET INST, DEPT PATHOL, BRUSSELS, BELGIUM
CYA   BELGIUM
SO   CYTOMETRY, (01 MAY 1996) Vol. 24, No. 1, pp. 83-92.
       ISSN: 0196-4763.
DT   Article; Journal
FS   LIFE
LA   ENGLISH
REC   Reference Count: 44
       ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB   The aim of the present work is to present the potential uses of a

classification techniqu● labeled the ''decision tree'' f●r tumor
characterisation when ●●ed with a large number of feat●●s, The decision
tree technique enables multifeature logical **classification** rules
to be produced by determining discriminatory values for each feature
selected, In this report, we propose a methodology that used decision
trees to compare and evaluate the information contributed by different
types of features for tumor characterisation, This methodology is able to
produce a set of hypotheses related to a diagnosis and or prognosis
problem, For example, hypotheses can be producted (on the basis of a set
of descriptive features) to explain why tumor cases belong to a given
histopathological group. To illustrate our purpose, this methodology was
applied to the difficult problem of leiomyomatous tumour diagnosis, The
aim was to illustrate what kind of diagnostic information can be extracted
from a sample data set including 23 smooth muscle tumors (14 benign
leiomyomas and 9 malignant leiomyosarcomas) described by a large set of
computer-assisted, microscope-generated features, Three groups of features
were used relating to: (1) ploidy level determination (10 features), (2)
quantitative chromatin pattern description (15 features), and (3)
immunohistochemically related antigen specificities (6 features), All
these features were quantified by digital **cell image
analysis**, The results suggest that an objective distinction
between leiomyomas and leiomyosarcomas can be established by means of
simple logical rules depending on only a few features among which the
immunohistochemically revealed antigen expression of desmin plays a
preponderant part, One of the combinations of features proposed by the
methodology is interesting for pathologists, because it includes two
features describing the appearance of a nucleus in terms of chromatin
distribution homogeneity and **density**, two features widely used
by pathologists in tumor-grading systems. (C) 1996 Wiley-Liss, Inc.

AB   Interlaboratory quality assurance studies have been conducted for DNA
      flow cytometry, but not for DNA **image analysis**
      systems. The purpose of this study was to investigate if concordance of
      DNA **image analysis** systems existed with respect to
      classification and staining of standardized material. In three
      separate rounds, human liver **cells** were measured randomly by
      means of the image cytometry system present in each participating
      laboratory. The features integrated optical **density** (IOD) and
      AREA were reported. The relationship between the coefficient of variation
      (CV) of the 2c and 4c peak were compared with three models. In the three
      rounds the number of participating laboratories was 11, 14 and II,
      respectively. Sequential plotting of normalized IOD values yielded useful
      information about intra-measurement variation. Comparison of measurements
      in specimens stained in the participating and central laboratory revealed
      similar CV values. la general, the precision of the instruments, expressed
      as the 4c/2c and 8c/2c ratios was good. The accuracy of the different
      laboratories expressed as the CV of IOD for the three rounds Varied from
      2-17%. The relation of the CVs of the 2c and the 4c peaks was best fit
      with the model of the addition of two normal distributions. We conclude
      that interlaboratory comparison of DNA measurements performed on different
      instruments is certainly feasible and could facilitate improvement in

quality standards.

·AN 96065086   MEDLINE
DN 96065086   PubMed ID: 7485398
TI Phenotypic analysis of pulmonary perivascular mononuclear infiltrates that occur as a direct result of acute lethal graft-versus-host disease describes the onset of interstitial pneumonitis.
CM Erratum in: Am J Pathol 1996 Feb;148(2):678
AU Workman D L; Clancy J Jr
CS Department of Cell Biology, Neurobiology, and Anatomy, Loyola University Chicago, Maywood, Illinois 60153, USA.
NC AI-12738 (NIAID)
SO AMERICAN JOURNAL OF PATHOLOGY, (1995 Nov) 147 (5) 1350-60. Journal code: 3RS; 0370502. ISSN: 0002-9440.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199512
ED Entered STN: 19960124
    Last Updated on STN: 19980206
    Entered Medline: 19951219
AB We recently determined that the sequential development of interstitial pneumonitis and lymphocytic bronchiolitis/bronchitis occurs as a direct result of acute lethal graft-versus-host disease. Interstitial pneumonitis develops before lymphocytic bronchiolitis/bronchitis primarily from the dissemination of perivascular mononuclear infiltrates. We have used the adult, nonirradiated (DA x LEW) F1 hybrid rat in the absence of chemotherapy, immunosuppression, or overt infection to determine the phenotype of infiltrating perivascular mononuclear **cells** throughout acute lethal graft-versus-host disease. F1 animals were intravenously injected with 1 x 10(6) DA parental lymphoid **cells** /g body weight, which produced 100% morbidity and mortality by day 21. Graft-versus-host disease animals were killed on days 3, 7, 10, 14, and 15 to 21 after injection. Whole left lung lobes were frozen, serially sectioned (4 microns), and incubated with a panel of mouse anti-rat monoclonal antibodies. Labeled antibody **density** was determined by computerized **image analysis**. Perivascular infiltration was observed first for ED1+, OX8+, and W3/25+ **cells** , and then OX41+, W3/13+ and OX19/25+ populations. OX6 was expressed in control **tissues** and at all time points tested. OX12+, OX39+ and MOM/3F12/F2+ **cells** were not quantifiable. The present study has determined that the process of perivascular infiltration was produced through a biphasic influx of OX6+, T-**cell**, and macrophage populations.

AN 1995:202135 BIOSIS
DN PREV199598216435
TI Frozen Section Microautoradiography in the Study of Radionuclide Targeting: Application to Indium-111-Oxine-Labeled Leukocytes.
AU Puncher, Matthew R. B.; Blower, Philip J. (1)
CS (1) Nuclear Med. Dep., Kent Canterbury Hosp., Canterbury, CT1 3NH UK
SO Journal of Nuclear Medicine, (1995) Vol. 36, No. 3, pp. 499-505. ISSN: 0161-5505.
DT Article
LA English
AB The microscopic biodistribution of radioactivity in **tissues** is important in determining microdosimetry. This study addresses the use of frozen section microautoradiography in studying the subcellular distribution of 111In in leukocytes labeled with 111In-oxine. Methods: In conjunction with frozen section microautoradiography, computer **image analysis** methods were applied to the analysis and quantification of leukocyte sections and superimposed autoradiographs. Rapid **cell** fractionation was used to confirm the results. Results: The emulsion (Ilford K2) response was linear over the concentration range investigated (0-33 MBq ml-1). Resolution of radionuclide distribution was better than 2 mu-m. The autoradiographs

showed no dependence of radiolabel uptake on **cell** type. ●
Classification of all ●ls into intervals according to ●
grain **density** suggests an exponential rather than normal
distribution, with approximately 50% of **cells** having little or
no radiolabel. In any one sample, **cells** which were heavily
labeled were approximately 10 times more likely to be found in aggregates
(60% found in aggregates, mostly neutrophils) than **cells** which
were not heavily labeled (6% found in aggregates); and the grain
densities were at least twofold higher over nuclei than over
cytoplasm. The last observation was confirmed by the rapid **cell**
fractionation method which showed that approximately 57% of the total
radioactivity was bound to nuclei. Conclusion: Frozen section
microautoradiography is a practical and reliable approach to determining
sub-cellular distribution of 111In. The radiolabeling process causes
aggregation of neutrophils. Uptake is not significantly dependent on
cell type, but only a fraction of **cells** are appreciably
labeled. The radioactive concentration in **cell** nuclei is at
least two-fold higher than in cytoplasm. Microautoradiography can be used
to provide distribution data as input into computer models for
sub-cellular dosimetry.

L5   ANSWER 12 OF 16   MEDLINE
AN   95168377   MEDLINE
DN   95168377   PubMed ID: 7864163
TI   Branching points of renal resistance arteries are enriched in L-type
      calcium channels and initiate vasoconstriction.
AU   Goligorsky M S; Colflesh D; Gordienko D; Moore L C
CS   Department of Medicine, State University of New York at Stony Brook
      11794-8152.
NC   DK-26341 (NIDDK)
      DK-41573 (NIDDK)
      RR-05736 (NCRR)
SO   AMERICAN JOURNAL OF PHYSIOLOGY, (1995 Feb) 268 (2 Pt 2) F251-7.
      Journal code: 3U8; 0370511. ISSN: 0002-9513.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   199503
ED   Entered STN: 19950404
      Last Updated on STN: 19950404
      Entered Medline: 19950320
AB   The morphologic structures responsible for the drop in blood pressure
      along the preglomerular vasculature are not completely defined.
      Theoretical and videomicroscopic analyses of nonrenal vascular beds
      implicate bifurcations of resistance arteries as important sites of
      hemodynamic regulation. These structures contain pacemaker **cells**
      sensitive to calcium channel blockers and appear to initiate vasomotion.
      In the present study, we examined the possibility of functional diversity
      of smooth muscle **cells** along resistance arteries with regard to
      the **density** of voltage-gated L-type calcium channels. Staining
      of microdissected renal resistance arteries with Bodipy-labeled
      dihydropyridine and analysis by confocal microscopy showed enhanced
      binding at branching points compared with the distal sites in daughter
      vessels. Antibodies directed against the alpha 1-subunit of the
      dihydropyridine-sensitive calcium channels confirmed the enhanced
      expression of L-type channels predominantly at the sites of bifurcations
      of renal resistance arteries. Fluorescence digital-**image**
      analysis of freshly microdissected branches of cortical radial
      (interlobular) and arcuate arteries intravitally labeled with a calcium
      indicator, fluo 3, identified branching points as initiator sites of
      depolarization-induced intracellular Ca2+ concentration ([Ca2+]i)
      transients, which propagated along the vascular wall at the rate of 2.0
      +/- 0.7 micron/s. Videomicroscopy of blood-perfused rat juxtamedullary
      resistance arteries showed that branching points exhibit more pronounced
      contractile responses to KCl-induced depolarization than distal sites
      along the daughter vessels. Collectively, these results demonstrate that
      branching points are enriched in L-type calcium channels, a finding that
      suggests these structures may serve as important regulators of renal

hemodynamics.

AN   95068610   MEDLINE
DN   95068610   PubMed ID: 7526719
TI   Computer-assisted **image analysis** of tumor sections for
      a new thrombospondin receptor.
AU   Arnoletti J P; Albo D; Jhala N; Granick M S; Solomon M P; Atkinson B;
      Rothman V L; Tuszynski G P
CS   Department of Surgery, Medical College of Pennsylvania, Philadelphia
      19129.
SO   AMERICAN JOURNAL OF SURGERY, (1994 Nov) 168 (5) 433-6.
      Journal code: 3Z4; 0370473. ISSN: 0002-9610.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Abridged Index Medicus Journals; Priority Journals
EM   199412
ED   Entered STN: 19950110
      Last Updated on STN: 19960129
      Entered Medline: 19941207
AB   BACKGROUND: A **cell** surface receptor (50 kd) has been recently
      identified in malignant **cells** that recognizes the tumor
      cell adhesive domain (ie, cysteine-serine-valine-threonine-
      cysteine-glycine [CSVTCG]) of thrombospondin (TSP). This CSVTCG-specific
      TSP receptor can be considered as a new tumor marker, and its
      concentration on the **cell** surface may correlate directly with
      the capacity of tumor **cells** to invade and metastasize. MATERIALS
      AND METHODS: Six patients with primary, stages III and IV squamous
      cell carcinomas of the head and neck were studied. Tumor sections
      were specifically stained for this receptor with immunohistochemical
      techniques. The stained specimens were then subjected to computer-assisted
      image analysis. The area of positive staining and the
      heterogeneity of the pattern of staining were compared to peritumoral
      angiogenesis and clinical outcome of the patients. RESULTS: The results
      indicate that those patients with a high and homogenous positive stain
      score (mean +/- standard error [SE] 78 +/- 5%) for the CSVTCG-specific TSP
      receptor had high microvessel **density** and died from metastatic
      disease within 12 months of initial treatment (correlation coefficients =
      0.95 and 1, respectively). Patients with a low and heterogenous positive
      stain score for receptor (mean +/- SE 8 +/- 2%; P < 0.001) had low
      microvessel counts and remained disease-free for at least 2 years. There
      was no relationship between receptor **density** and histologic
      classification of the primary tumors. CONCLUSION: The
      CSVTCG-specific TSP receptor, quantified through **image**
      analysis of immunohistochemical stained **tissue** sections,
      is highly predictive of clinical outcome in patients with squamous
      cell carcinomas of the head and neck.

AN   1993:230606   BIOSIS
DN   PREV199395121781
TI   Method for counting mitoses by image processing in Feulgen stained breast
      cancer sections.
AU   Ten Kate, T. K.; Belien, J. A. M.; Smeulders, A. W. M.; Baak, J. P. A. (1)
CS   (1) Dep. Pathology, Free Univ. Hosp., de Boelelaan 1117, 1007 MB
      Amsterdam, The Netherlands
SO   Cytometry, (1993) Vol. 14, No. 3, pp. 241-250.
      ISSN: 0196-4763.
DT   Article
LA   English
AB   This study describes an image processing method for the assessment of the
      mitotic count in Feulgen-stained breast cancer sections. The segmentation
      procedure was optimized to eliminate 95-98% of the nonmitoses, whereas 11%
      of the mitoses did not survive the segmentation procedure. Contour
      features and optical **density** measurements of the remaining
      objects were computed to allow for **classification**. Twelve
      specimens were analyzed, nine used to serve as a training set, and three
      put aside for later use as independent test set. The fully automatic image

processing method correctly classified 81% of the mitoses at the specimen
level while inserting ● false positives. The automatic procedure
strongly correlated with the interactive counting procedure (r=0.98).
Although the fully automatic method provided satisfactory results, it is
not yet suited for clinical practice. The autamated method with an
interactive evaluation step gave an accurate reflection of the mitotic
count showing an almost perfect correlation with the results of the
interactive morphometry (r=0.998). Therefore this semiautomated method may
be useful as prescreening device.

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L5    ANSWER 15 OF 16  MEDLINE
AN    92316470      MEDLINE
DN    92316470    PubMed ID: 1618471
TI    Changes of IgG-bearing cell populations in the portal tracts of
      patients with chronic liver disease of viral etiology: an evaluation by
      immunoperoxidase method and computerized image analysis

AU    Torgano G; Vecchi M; Arosio E; Santambrogio D; Ronchi G; Annoni G;
      Tomasini M; Contessini E; de Franchis R
CS    Department of Internal Medicine, University of Milano, Italy.
SO    HEPATOLOGY, (1992 Jul) 16 (1) 19-23.
      Journal code: GBZ; 8302946. ISSN: 0270-9139.
CY    United States
DT    Journal; Article; (JOURNAL ARTICLE)
LA    English
FS    Priority Journals
EM    199208
ED    Entered STN: 19920815
      Last Updated on STN: 19920815
      Entered Medline: 19920803
AB    Little is known about the distribution of IgG-bearing cell
      subpopulations in normal liver and their possible changes in disease
      conditions. We developed an immunohistochemical method that proved
      suitable and accurate for the identification and characterization of
      IgG-bearing cells and their subpopulations in liver specimens.
      The method uses specific monoclonal antibodies on serial mirror liver
      sections. We applied this method to four normal liver tissue
      specimens and 25 liver biopsy samples of chronic hepatitis of viral
      etiology. Only rare IgG-bearing cells could be observed in the
      portal tracts of normal liver specimens. In contrast, a dense infiltrate
      of such cells was seen in liver specimens from patients with
      chronic viral hepatitis. The density of IgG-bearing
      cells in such patients ranged from 6 to 20 cells x
      10(-4) micron2 in the different specimens (mean = 11 x 10(-4) micron2).
      The increase in IgG-bearing cells did not appear to be related
      to the histological diagnosis, to the degree of histological inflammatory
      activity or to the type of viral infection. The major population of
      IgG-bearing cells consisted of IgG1-positive cells
      (68%); IgG2- (17%), IgG3- (8%) and IgG4 (7%)-bearing cells
      represented only minor fractions. The increased prevalence of IgG1-bearing
      cells observed in chronic hepatitis but not in normal liver
      specimens suggests that these findings may reflect an activation of
      antibody production directed toward viral antigens or antigenic structures
      of self. The identification of the antigenic specificities of the
      antibodies produced by IgG-bearing cells might provide important
      clues in understanding the pathogenesis of chronic viral hepatitis.

L5    ANSWER 16 OF 16  BIOSIS  COPYRIGHT 2001 BIOSIS
AN    1991:392904  BIOSIS
DN    BA92:70219
TI    ASSESSEMENT OF CELL PROLIFERATION ON POROUS MICROCARRIERS BY
      MEANS OF IMAGE ANALYSIS.
AU    FORAN D J; CAHN F; EIKENBERRY E F
CS    DEP. PATHOL., ROBERT WOOD JOHNSON MED. SCH., UNIV. MED. DENTISTRY NEW
      JERSEY, PISCATAWAY, N.J. 08854.
SO    ANAL QUANT CYTOL HISTOL, (1991) 13 (3), 215-222.
      CODEN: AQCHED. ISSN: 0884-6812.
FS    BA; OLD
LA    English
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AB   Spherical porous microcarriers (PMCs) made from collagen glycosaminoglycan
      crosslinked copolymers have exhibited considerable promise as growth
      surfaces for the proliferation of anchorage-dependent mammalian
      cell lines and have demonstrated the ability to entrap
      anchorage-independent **cells**. However, quantification of
      cell growth on PMCs has proved difficult. A method of measuring
      the proliferation of PMCs, based on **image analysis**, is
      presented. Using CV1 and CHO **cell** lines, samples of PMCs were
      removed from culture at various times, fixed, embedded and sectioned. The
      2 .mu.m sections were stained, photographed and digitized in three colors.
      A computer program was developed to evaluate digitized PMC cross-sections
      and to classify pixels as conforming to either background, cytoplasmic,
      matrix or nuclear parameters, based on a set of **classification**
      rules determined by statisticl analysis. Growth curves were generated by
      relating the number of pixels occupied by cellular material to the total
      number of pixels in the PMC cross-section. The PMCs were found to foster
      cell proliferation, with **cell densities**
      approaching 100% occupancy.

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        (FILE 'HOME' ENTERED AT 20:47:44 ON 22 MAY 2001)

        FILE 'BIOSIS, CAPLUS, MEDLINE, SCISEARCH' ENTERED AT 20:48:11 ON 22 MAY
        2001
L1   0 S CELL DENISTY AND IMAGE ANALYSIS
L2   0 S CELL DENISTY AND CLASSIFICATION
L3   196 S CELL AND CLASSIFICATION AND IMAGE ANALYSIS AND TISSUE
L4   22 S L3 AND DENSITY
L5   16 DUP REM L4 (6 DUPLICATES REMOVED)

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